

## **Abstract**

**Title:** Diagnosis of muscle imbalances using TMG in women's artistic gymnastics.

**Objectives:** The main goal of this bachelor thesis was to diagnose functional muscular tension measured by the tensiomyograph TMG100. We especially focused on biceps brachii, triceps brachii, and deltoid muscles. 5 girls from one of the best Prague's artistic gymnastics clubs participated in this study. All the participants had the same training time and the same training plan.

**Methods:** This bachelor thesis is a case study. The research is done qualitatively, by mapping a small number of participants. The actual measurements on the tensiomyograph, the analysis of the results and the recommendations made thereon were performed on five selected individuals.

**Results:** Based on our findings, we formulated two hypotheses. Hypothesis 1: As a result of training, the biceps brachii is shortened on the dominant side and the contralateral side is weakened. Hypothesis 2: As a result of training, the triceps brachii is shortened on the contralateral side.

**Key words:** artistic gymnastics, tensiomyograph, diagnostics of muscle imbalances, muscles of upper limbs

